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Atty. Dkt. No. 040356-0496

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant: Munehiro TABATA et al.
Title: SULFUR POISONING ELIMINATION OF DIESEL ENGINE CATALYST
Appl. No.: 10/713,355
Filing Date: 11/17/2003
Examiner: T. M. Nguyen
Art Unit: 3748
Confirmation Number: 9164

REPLY BRIEF

Mail Stop Appeal Brief - Patents
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Sir:

In the Answer, the Examiner continues to rely on Hepburn for disclosing the feature of independent claim 15, with corresponding features in independent claims 27 and 28, of a programmable controller programmed to determine if a regeneration of the filter is required while performing the process of eliminating the sulfur oxides. In particular, the Examiner states on page 10 of the Answer:

The examiner has concluded that in step 274, Hepburn et al. clearly determine if a regeneration of the catalyst to remove the particulate matter is required while performing a process of eliminating the SOx. In this step, the monitoring of a SOx purge time against a threshold time (DSOXCNT PRD) during a SOX purge is a means for Hepburn et al. to determine if a regeneration of the catalyst to remove particulate matter is required (emphasis added). Thus, in a broad reasonable interpretation of the claim language, Hepburn et al. indeed disclose or teach the claimed limitation in dispute. (emphasis in original)

Appellants respectfully disagree. Interpreting step 274 of Hepburn as disclosing determining if the regeneration of its particulate matter filter is required while performing the process of eliminating the sulfur oxides would not be a reasonable interpretation to one skilled in the art. The monitoring of a SOx purge time against a threshold time in Hepburn merely determines the duration of the SOx purge, the monitoring of the SOx purge time does not determine that the regeneration of the filter is required, and such a determination step is not performed during the SOx purge.

While Hepburn does determine that the regeneration of its filter is required, such a determination is made prior to the SOx purge shown in process of FIG. 4C, and in particular such a determination is made in the FIG. 4A process. In particular, Hepburn discloses in step 222 of FIG. 4A determining whether the accumulated particulate matter, CUMPM1, for filter 19 is greater than a predetermined maximum amount, CUMPM1_MAX, of particulate matter (See FIG. 4A, paragraphs [0054] and [0057]). The determination of whether regeneration of the particulate matter filter is required in Hepburn is thus performed at step 222 in FIG. 4A, which is before the process of FIG. 4C, which includes step 274 referred to by the Examiner. In particular, when the cumulative amount of SOx, CUMSOX1, is also greater than a maximum value CUMSOX1_MAX, the routine SOXREG1-PMREG1 (the FIG. 4C routine) is executed to purge both SOx and particulate matter (paragraph [0063]). Thus, the determination of whether regeneration of the particulate matter filter is required is performed at step 222 in FIG. 4A, before performing the routine SOXREG1-PMREG1 in FIG. 4C to purge both SOx and particulate matter. The step 274 of the routine SOXREG1-PMREG1 is performed after it has already been determined in step 222 that regeneration of the particulate matter filter is required, and one of ordinary skill in the art would have reasonably interpreted Hepburn as not disclosing the method of independent claim 15, or corresponding features in independent claims 27 and 28.

Moreover, the process of Hepburn would not realize the advantages of the recited process of independent claim 15, where it is determined if a regeneration of the filter is required while performing the process of eliminating the sulfur oxides. By determining if a regeneration of the filter is required while performing the process of eliminating the sulfur

oxides, fuel consumption is minimized while still achieving an effective filter regeneration. By contrast, FIG. 4c of Hepburn shows that elimination of sulfur oxides and removal of particulate matter are performed alternately. According to the Hepburn process, it is possible that removal of particulate matter is performed when the deposit amount of particulate matter is small, because Hepburn does not determine if the regeneration of its filter is required while performing the process of eliminating the sulfur oxides. Such a regeneration as in Hepburn may increase the fuel consumption as compared to the process recited in claim 15, with corresponding features in independent claims 27 and 28.

For at least the foregoing reasons, it is submitted that the PTO's rejections are erroneous, and reversal of the applied rejections is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Appellants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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